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Parental Divorce and Sibling Relationships

A Research Note

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This study examines long-term effects of parental divorce on sibling relationships in adulthood and the role of predivorce parental conflict. It used large-scale retrospective data from the Netherlands that contain reports from both siblings of the sibling dyad. Results show limited effects of parental divorce on sibling contact and relationship quality in adulthood but strong effects on sibling conflict. The greater conflict among siblings from divorced families is explained by the greater parental conflict in these families. Parental conflict is a far more important predictor than parental divorce per se. Siblings from high-conflict families have less contact, lower relationship quality, and more conflict than do siblings from low-conflict families. Finally, when it comes to sibling relationship quality, the effect of parental divorce depends on the amount of parental conflict. Parental divorce has little effect on the quality of the relationship in low-conflict families, but it improves the relationship in high-conflict families.

Keywords: *dyadic data; parental conflict; parental divorce; siblings*

Divorce disrupts family ties. Partners dissolve their marriage, and relationships between parents and their children deteriorate. The relationship with the custodial parent (usually, the mother) often becomes less supportive (Astone & McLanahan, 1991; but see Riggio, 2004), and so does

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contact with the nonresident parent (Amato, 1987; Manning & Smock, 1999). As a result, children from divorced families have fewer parental resources at their disposal and so lack the support and warmth of a well-functioning intact family. The decline in resources and support may lead to the many and well-documented negative outcomes for these children, such as low educational attainment and problem behavior (Amato, 2000).

Parental divorce may disrupt not only ties between partners and between parents and children but also relationships among the children themselves. The divorce literature has paid relatively little attention to the effect of parental divorce on these types of nuclear family ties. Only a few studies have examined how parental divorce affects sibling relationships (e.g., Amato, 1987; Riggio, 2001). This lack of attention is surprising and unfortunate. Sibling relationships are the longest-surviving family relationships and an important source of comfort and support throughout the life course (Campbell, Connidis, & Davies, 1999; Eriksen & Gerstel, 2002; Voorpostel, Van der Lippe, Dykstra, & Flap, 2007). Therefore, not only may parental divorce be more disruptive to the nuclear family than what is commonly thought, but it may also have a stronger and longer-lasting effect if sibling relationships deteriorate. In this study, we aimed to further our understanding of the effect of parental divorce on sibling relationships, and we did so in three ways.

First, we assessed the effect of parental divorce on sibling relationships in adulthood. As such, there are two opposing views: The first states that the experience of parental divorce brings siblings closer together, whereas the second perspective argues that parental divorce drives them apart (e.g., Riggio, 2001). Although some small-scale studies have found support for the former view (e.g., Bush & Ehrenberg, 2003; Kier & Lewis, 1998), larger-scale studies have supported the latter. Sibling relationships are more hostile and conflict laden (MacKinnon, 1989; Panish & Stricker, 2001; Sheehan, Darlington, Noller, & Feeney, 2004), less supportive, and of lower quality (Amato, 1987; Milevsky, 2004; Riggio, 2001) in divorced families than in intact families. These studies have mostly focused on sibling relationships in childhood and adolescence (e.g., Amato, 1987; MacKinnon, 1989) or young adulthood (Milevsky, 2004; Riggio, 2001). By our focus on sibling relationships beyond young adulthood, we gain knowledge about whether this negative effect of parental divorce persists in middle and late adulthood.

Second, we aimed to understand why parental divorce affects sibling relationships. One of the most important explanations for the adverse consequences of parental divorce is that it is not the divorce per se but the parental conflict that goes hand in hand with divorce that causes children to

be worse off (Amato, 2000; Emery, 1982; Fischer, 2004). Also, the literature on siblings emphasizes the role of parental conflict in explaining why parental divorce affects sibling relationships (Brody, 1998; Sheehan et al., 2004), but only a few studies have directly assessed the extent to which parental conflict explains the adverse effects of parental divorce on sibling relationships (Milevsky, 2004; Panish & Stricker, 2001).

Third, we aimed to understand the conditions under which parental divorce is more or less detrimental to the sibling bond. The child adjustment literature often points out that the negative effect of parental divorce may be nonexistent in high-conflict families because children are no longer exposed to this harmful conflict when parents split up (Amato, Loomis, & Booth, 1995; Morrison & Coiro, 1999). The assumption that divorce may be better than staying together in case of high conflict has, to our knowledge, not been tested in the context of sibling relationships.

The effect of parental divorce on the sibling bond and the role of parental conflict are examined by using large-scale survey data from the Netherlands. We focus on three aspects of the sibling relationship: contact, conflict, and relationship quality. Our data and research design improve on prior studies that examined the effect of parental divorce on sibling relationships. First, we have a larger sample than that of prior studies, which often include no more than 300 respondents. Second, we use reports from both siblings in the dyad rather than rely on the reports of only one sibling. Third, we include more control variables than other studies have. As such, our findings provide more conclusive answers to the question of whether, why, and when parental divorce affects the sibling bond.

Theoretical Background

Divorce goes hand in hand with stressful events that may be harmful to children (Amato, 2000). Stress results from the loss of financial resources, given that the economic situation often worsens after divorce (Bianchi, Subaiya, & Kahn, 1999; Poortman, 2000). Children also experience stress because of the loss of emotional and social support resulting from the reduced contact with the nonresidential parent and the greater strains on the residential single parent (Astone & McLanahan, 1991; Manning & Smock, 1999). Another important stressor, one central to our discussion here, is the parental conflict associated with divorce. In the process leading up to divorce, parents often have conflicts, and these may linger on (Fischer, De Graaf, & Kalmijn, 2005). This parental conflict may in turn induce stress in children.

Researchers have argued that the stress resulting from parental conflict and the loss of economic and social resources affects the sibling relationship in two opposite ways. First, children may compensate for this stress by developing closer sibling bonds as they seek support and comfort from their brothers and sisters (Bank & Kahn, 1982; Hetherington, 1988). Second, the stress may translate into aggression and hostility toward siblings (Conger, Ge, Elder, Lorenz, & Simons, 1994; Cummings, Zahn-Waxler, & Radke-Yarrow, 1981; Dunn, Deater-Deckard, Pickering, & ALSPAC Study Team, 1999; Grych & Fincham, 1990; Stocker & Youngblade, 1999). Over and above the stress that parental conflict induces in children, the conflict associated with parental divorce is expected to have a negative effect on sibling relationships for two other reasons. First, children who often see their parents quarrel are likely to imitate this behavior in their relationships with others, including siblings (Amato, 1993; Bandura, 1977). Second, children may have to choose whose side they are on when parents fight (Amato, 1993), which is likely to strain sibling relationships as well.

These arguments suggest that parental divorce may have a positive or a negative effect on the sibling bond, but most of the arguments go in the direction of a negative effect. Although scarce, existing research also suggests a negative effect. Young children and adolescents from divorced families are found to experience more conflict and hostility in their relationships with siblings (Amato, 1987; MacKinnon, 1989). Moreover, research on adults suggests that this negative effect persists in adulthood. Samples of young adults have shown that siblings of divorced parents are less close and supportive than siblings from intact families (Milevsky, 2004; Riggio, 2001), and findings based on samples of older adults have shown such negative effects of parental divorce in cases of sibling conflict (Panish & Stricker, 2001). Given that most evidence is in the direction of a negative effect, we expect that siblings of divorced parents have less contact, more conflict, and lower relationship quality than do siblings from intact families.

In light of these arguments, we also expect that at least part of the divorce effect on sibling relationships can be explained by parental conflict; that is, the bond between siblings from a divorced family is worse because their parents more often had conflicts. Empirically, the divorce adjustment literature consistently shows that adverse child outcomes are partly explained by parental conflict (see reviews by Amato, 1993, 2000). Evidence in the context of sibling relationships is rare, and it pertains to adult siblings only. These studies suggest that the effect of parental divorce is mediated by marital satisfaction (Milevsky, 2004) and that indicators for marital quality are more important determinants of sibling relationships than parental divorce *per se* (Milevsky, 2004; Panish & Stricker, 2001).

Parental conflict may also condition the effect of parental divorce on sibling relationships. In case of high conflict between parents, it may be better for children if their parents were to divorce because this may mitigate the stressful situation at home (Amato et al., 1995; Hanson, 1999; Jekielek, 1998; Morrison & Coiro, 1999). This means that the effect of parental divorce is less negative or even positive when parents often fight, as compared to low-conflict families. Empirical evidence indeed shows that this is the case when considering child well-being and problematic behavior (e.g., Hanson, 1999; Strohschein, 2005). Although not tested so far, a similar reasoning might hold for sibling relationships—namely, if being exposed to parental conflict (rather than divorce) causes the sibling bond to deteriorate, then a divorce might improve sibling bonds, given that siblings would no longer be exposed to parental conflict (or at least they would be to a lesser extent). Compared to that of low-conflict families, the negative effect of parental divorce on sibling relationships would therefore be expected to be weaker or even positive in case of high parental conflict.

Method

We used data from the first wave of the Netherlands Kinship Panel Study (Dykstra et al., 2005). Prospective data following siblings before and after parental divorce into adulthood would be ideal. Given the long time span, it may come as no surprise that such data are not (yet) available. We therefore relied on cross-sectional data that contain retrospective information about parental divorce and conflict. Although longitudinal data have become quite common in the child adjustment literature on parental divorce (for review, see Amato, 2000), the few studies on parental divorce and sibling relationships have relied on cross-sectional data as well. Our data are unique, however, in that we have reports from both siblings of the dyad, thereby providing a more accurate view on the sibling bond.

Between 2002 and 2004, 8,161 individuals between 18 and 80 years old were interviewed face-to-face in their homes by means of a structured computer-assisted interview. The overall response rate was 45%—a rate quite comparable to those of other Dutch family surveys (Dykstra et al., 2005). After the interview, respondents were asked to fill out a supplementary self-completion questionnaire, and 92% of them returned it. Compared to the Dutch population, women were overrepresented, especially women in the age group of 35 to 54 years old. Young men (aged 18 to 30 years) were somewhat underrepresented. There was an overrepresentation of people with children at home and an underrepresentation of children still living with their parents.

During the interview, respondents (from here on, also called *anchors*) reported on several family ties, including their siblings. One of the respondent's siblings was randomly selected by the computer to be approached with a self-administered questionnaire. If the respondent had only one sibling, this sibling was selected. About 27% of the respondents had one sibling, 26%, two; 16%, three; and 31%, more than three. When the anchor gave permission to contact this randomly selected sibling, a questionnaire was sent to the sibling or left at the anchor's residence. In all, 2,731 sibling questionnaires were received, which was 60% of all sibling questionnaires that were mailed or left at anchors' homes. This constitutes a response rate of 36% of all eligible siblings, including those who were selected but for whom the anchor did not grant contact permission. After excluding dyads with missing values on the dependent variables and dyads who were non-biological siblings, we were left with a sample of 2,707 complete dyads, containing information from 5,414 siblings.

Response by siblings was selective. First, coresident siblings were more likely than non-coresident siblings to return questionnaires (64% versus 37%). Second, the response rate was selective with respect to the perceived quality of the relationship as reported by the anchor; that is, the better the relationship, the higher the response rate. As a consequence, our sample is biased toward siblings who have good relationships. As such, we may underestimate the effects of parental divorce and conflict, thereby providing a conservative test of the hypotheses. We would like to note, though, that the bias toward positive sibling relationships is also likely to be present in other research on siblings. A common approach is to ask respondents to choose the sibling with whom they have most contact or feel the closest and then ask questions about this sibling relationship. Our procedure to randomly select a sibling to be questioned overcomes this problem of selective selection, even though selective response by the randomly chosen siblings again introduces bias toward positive relationships.

Measures

The three dependent variables—that is, contact frequency, conflict, and perceived relationship quality—tap different aspects of the sibling relationship. Contact frequency is a general often-used measure that indirectly indicates the content of the relationship. Relationship quality and conflict are more indicative of the content of the sibling relationship. These aspects refer to positive and negative aspects of personal relationships and differ in time frame: Whereas the recent occurrence of conflict is an instantaneous

measure, overall relationship quality gives a general picture of the relationship. The correlation is therefore only $-.13$. The correlation of contact frequency with relationship quality is moderately positive ($.33$) and with conflict, low and positive as well ($.12$); having much contact thus indicates a more positive and more negative content. A limitation of the measures for conflict and relationship quality is that they are based on single items and have a limited range. Contact frequency, however, is based on two items and has a wider range. Below we present details on how the dependent variables were constructed. Important to note is that each indicator of the sibling relationship is assessed by both siblings, which comes down to having two observations for the same construct per sibling dyad. As explained later, the analyses use reports of both siblings as dependent variables, while adjusting for their interdependency.

Contact frequency. Anchors were asked to report how often they had seen each other, as well as how often they had had contact by phone, e-mail, or letter in the past 12 months. Answers to both questions ranged from 1 (*never*) to 7 (*daily*). The scores were summed, and the resulting scale therefore ranges from 2 to 14, with higher scores indicating more frequent contact. Siblings were asked the same questions in the written questionnaire, and the same procedure was used here to construct a scale for contact frequency. Coresident siblings were not questioned about their contact frequency. The analyses therefore pertain to the subsample of non-coresident siblings ($n = 5,232$ siblings; $n = 2,616$ sibling dyads).

Conflict in the sibling relationship. Anchors were asked whether they had experienced any conflicts, strains, or disagreements with their sibling during the past 3 months. Response categories were as follows: 1 = *not at all*, 2 = *once or twice*, and 3 = *several times*. Siblings answered the same question in the written questionnaire. Because few anchors and siblings reported having had conflicts several times (less than 2%), we had to construct a dichotomous measure indicating the presence (coded as 1) versus absence of conflicts (coded as 0). In 15% of the sibling relationships, conflicts had occurred (see Table 1).

Relationship quality. Anchors were asked, "Taking everything together, how would you describe your relationship with [sibling]?" Answers were rated as follows: 1 = *not great*, 2 = *reasonable*, 3 = *good*, 4 = *very good*. The same question was included in the sibling's written questionnaire. Because few siblings qualified their relationship as *not great* (2%) or *reasonable*

Table 1
Descriptive Statistics for Dependent and Independent Variables

Variable	<i>M</i>	<i>SD</i>	Range
Dependent variables: Level 1			
Sibling contact ^a	7.711	1.827	2-14
Sibling conflict	0.150	—	0-1
Sibling relationship quality	0.833	—	0-1
Independent variables: Level 2			
Parental divorce	0.075	—	0-1
Parental conflict	1.853	1.929	0-10
Control variables: Level 2			
Size sibling group	3.130	2.387	1-17
Ln geographical distance to sibling	2.034	3.835	-13.82-5.51
Coresident sibling	0.034	—	0-1
Sibling lives abroad	0.037	—	0-1
Parent deceased	0.547	—	0-1
Control variables: Level 1			
Age	44.740	14.447	14-85
Employed	0.621	—	0-1
Partnered	0.717	—	0-1
Children	0.673	—	0-1
Female	0.580	—	0-1
Education	6.380	2.474	1-11
Religious	0.577	—	0-1
Response from sibling (not anchor)	0.500	—	0-1

Note: Level 1: $n = 5,414$. Level 2: $n = 2,707$. Ln = natural log. Standard deviations not reported for dichotomous variables.

a. Level 1: $n = 5,232$ for sibling contact (because this information was not available for coresident siblings).

(15%), these categories had to be combined. In addition, we combined the two upper categories and created a dichotomous variable indicating a positive (coded as 1) versus a not-so-positive relationship. Additional ordinal logistic analyses using all three categories (*not great* and *reasonable* combined, *good*, and *very good*) show that the upper two categories do not significantly differ from each other and so yield similar conclusions as the analyses using a dichotomous variable. Because logistic models are easier to interpret than ordinal models, we use the dichotomous version. Table 1 shows that 83% of the siblings reported having a *good* or *very good* relationship with their siblings. Our central independent variables refer to parental divorce and parental conflict. Information was obtained from the anchor by means of retrospective questions.

Parental divorce. Anchors were asked if their parents ever divorced or separated. Of all sibling pairs, 7.5% had divorced parents ($n = 202$). On average, parents divorced 20.0 years ago ($SD = 12.5$ years). Our analyses thus refer to the long-term consequences. We do not take into account the time since parental divorce or age at divorce, because our cross-sectional data do not allow for a straightforward interpretation; duration effects may as well be interpreted in terms of differential effects, depending on the age at divorce (and vice versa), and both may be interpreted in terms of differences between divorce cohorts. We also do not take into account whether parents remarried, because there were too few divorced families in which neither parent remarried ($n = 46$) to get reliable estimates.

Parental conflict. Anchors reported the occurrence of the following sorts of conflict between the parents when the anchor was fifteen years old: heated discussions, serious reproaches, temporarily no communication, escalating fights, temporarily living apart. If parents were already divorced when the anchor was fifteen years old, anchors reported on parental conflict prior to divorce. Response categories were as follows: 0 = *not at all*, 1 = *once or twice*, 2 = *several times*. Scores were summed, creating a scale ranging from 0 to 10 (Cronbach's $\alpha = .73$). The average score was 1.85, indicating low levels of conflict (Table 1). Note that when parents divorced long after the age of 15 (i.e., about 25% of parents divorced after the anchor was 18 years old), our measure of predivorce parental conflict may not be that reliable in that no conflict may have been present at that time. Our results may therefore underestimate the role of parental conflict. The retrospective nature of the questions, however, may lead to an overestimation of its role. Respondents whose parents divorced may in hindsight be less positive than respondents from intact families about the parental relationship, thereby leading to a higher correlation between parental divorce and conflict. Empirically, the correlation between parental divorce and conflict is found to be moderately positive (.31).

To avoid spurious effects, our analyses control for sociodemographic characteristics that are known to affect the sibling bond (e.g., Connidis, 2001; Eriksen & Gerstel, 2002; White & Riedmann, 1992) and that are related to parental divorce (e.g., Amato, 2000; Heaton, 1990; Joung, Van de Mheen, Stronks, Van Poppel, & Mackenback, 1998; Lehrer & Chiswick, 1993). Parental divorce is known to negatively affect children's socioeconomic achievements, the timing of leaving the parental home, and future family behavior. Because employment, educational level, coresidency of siblings, and partner and parenthood status also affect the sibling bond, we control for these variables. In addition, we control for siblings' religiosity

because parental divorce is more likely in nonreligious families and because religiosity positively affects sibling relationships. Because divorce is associated with worse health and higher mortality and because the sibling relationship is likely to change after parental death, we also control for whether either parent was deceased. The number of children is also known to be negatively associated with parental divorce and with the way that siblings interact. Another source of spuriousness is the geographical distance between siblings because parental divorce may lead to greater geographical distances between family members and because the distance is likely to affect the sibling relationship as well. Finally, we control for some basic information—namely, the age of the siblings and whether the report about the sibling bond comes from anchor or sibling. All information was provided by both siblings except for the geographical distance between them, whether the sibling lived in the same household (assigned 0 on geographical distance) or abroad (assigned the mean on geographical distance), the size of the sibling group, and whether either parent was deceased. This information was provided by the anchor. Descriptive statistics of the controls can be found in Table 1.

Analytical Strategy

We use reports from both siblings, which means that we have two observations per sibling dyad, and each is treated as a separate record in the data file. As a result, we have nonindependent data (Kenny, Mannetti, Pierro, Livi, & Kashy, 2002). The structure of the data (i.e., siblings are nested within dyads) causes the observations within sibling dyads to be more similar than those between dyads. Multilevel analysis is a useful tool for such nested data because it takes the nonindependent nature of the data into account (Sayer & Klute, 2005). The higher level (Level 2) is the dyad, and every dyad contains two Level 1 units, representing the answers from both siblings in the dyad. The dependent variables are reported by both siblings and so refer to Level 1. The central independent variables—that is, parental divorce and conflict—are reported by the anchor and refer to siblings' shared family background—thus, Level 2. We use multilevel regression analysis for sibling contact, and we use logistic multilevel analysis to estimate models for sibling conflict and relationship quality. Both the regression and logistic models are random-effect models. In logistic models, coefficients can be interpreted by taking the antilog (e^{β}) to determine how strongly the odds of conflict and a positive relationship increase or decrease when the independent variable increases by 1. Explained variance was calculated using an extension of the McKelvey and Zavoina measure (Snijders & Bosker, 1999).

We estimate three models. Model 1 includes the controls and parental divorce (Model 1A for sibling contact, Model 1B for relationship quality, and Model 1C for conflict). These variables are entered all at once. This model shows the main effect of parental divorce. In Model 2, parental conflict is added to examine whether parental conflict explains part of the effect of parental divorce. Methodologically, parental conflict is a mediating variable (see Baron & Kenny, 1986). A comparison of the effect of parental divorce in Model 1 and Model 2 shows the extent to which parental conflict explains the effect of parental divorce. Finally, Model 3 includes an interaction term between parental divorce and parental conflict to test whether the effect of parental divorce is dependent on the amount of pre-divorce parental conflict. In methodological terms, parental conflict is a moderating variable here (see Baron & Kenny, 1986). The main effect of parental divorce in Model 3 shows its effect in case of no conflict, and the interaction term shows how much the effect of parental divorce increases (in case of a positive interaction) or decreases (in case of a negative interaction) when the amount of parental conflict increases.

Results

Models 1A, 1B and 1C in Table 2 show the effects of parental divorce on sibling contact, relationship quality, and conflict, respectively. The results partially support our hypotheses. In line with expectations, sibling conflict is more likely to occur when parents are divorced: The odds of sibling conflict are significantly increased by about 50% ($100 \times [e^{.401} - 1]$). Contrary to expectations, however, we find no significant effects of parental divorce on sibling contact and relationship quality. Perhaps the effect is only present for sibling conflict because in this case imitation of parental behavior may be at play: The parental conflict associated with divorce is imitated by children in how they behave toward their siblings, thus resulting in higher sibling conflict—even though they may evaluate their relationship as being positive or they may have as much contact as siblings from intact families. It is therefore insightful to take into account the role of parental conflict, as done in Models 2A to 2C.

In these models, parental conflict is added to assess whether the effect of parental divorce is mediated by parental conflict. For all aspects of the sibling relationship, parental conflict is found to be an important determinant, much more so than parental divorce. When parents had more conflicts before divorce, siblings report less contact, more conflict, and a lower-quality relationship. Given that parental conflict has such strong effects, to what extent

Table 2
Effects of Parental Divorce and Parental Conflict on Sibling Contact,
Conflict, and Relationship Quality: Coefficients From Multilevel Models

	Contact			Relationship Quality			Conflict		
	Model 1A	Model 2A	Model 3A	Model 1B	Model 2B	Model 3B	Model 1C	Model 2C	Model 3C
Parental divorce	.150	.259*	.163	-.256	.068	-.513	.401*	.247	.567†
Parental conflict		-.051**	-.055**		-.152**	-.176**		.074**	.091**
Parental Divorce × Conflict			.027			.156*			-.090
Size sibling group	-.118**	-.118**	-.119**	-.066**	-.065**	-.067**	-.123**	-.124**	-.123**
Geographical distance	-.235**	-.234**	-.234**	-.131**	-.129**	-.128**	-.044*	-.043*	-.044*
Coresident sibling ^a	—	—	—	-.2,327**	-.2,295**	-.2,272**	1.129**	1.141**	1.123**
Sibling lives abroad	-.980**	-.967**	-.968**	-.279	-.230	-.236	.234	.223	.226
Age	-.020**	-.020**	-.020**	.007	.006	.006	-.044**	-.044**	-.044**
Employed	-.065	-.065	-.065	-.176	-.177	-.176	-.268*	-.269*	-.269*
Partnered	-.187**	-.188**	-.188**	-.253*	-.249*	-.247*	-.360**	-.360**	-.360**
With children	-.077†	-.077†	-.076	-.195	-.192	-.189	-.387**	-.389**	-.391**
Parent deceased	-.041	-.049	-.050	-.050	-.082	-.087	.342*	.354*	.356*
Female	.182**	.185**	.185**	.132	.143	.142	.241*	.239*	.239*
Education	-.009	-.008	-.008	-.039†	-.036†	-.035	.034	.033	.033
Religious	.072†	.066	.066	.310**	.280**	.277**	-.113	-.099	-.097
Response from sibling	-.083**	-.083**	-.083**	.164†	.164†	.164†	1.048**	1.051**	1.051**
(Pseudo) <i>R</i> -square ^b	.230	.232	.233	.038	.051	.053	.221	.225	.226
Rho	.648	.647	.647	.407**	.404**	.403**	.318**	.318**	.318**

Note: $n = 5,414$ siblings; $n = 2,707$ sibling dyads. In case of analyses for contact: $n = 5,232$ siblings; $n = 2,616$ sibling dyads.

a. Not included in model for contact, because contact information pertains only to non-coresident siblings.

b. Overall *R*-square for random effects regression model for contact and pseudo *R*-square for random effects logit models for relationship quality and conflict.

† $p < 0.10$. * $p < .05$. ** $p < .01$ (two-tailed).

can parental conflict account for any divorce effects? Because parental divorce exerts only a significant effect in the case of sibling conflict, this question is relevant only for sibling conflict. As expected, the effect of parental divorce on sibling conflict is strongly reduced after parental conflict is controlled for, and it is even no longer significant in Model 2C. The increased conflict among siblings from divorced families can therefore be completely explained by the parental conflict that comes with divorce. Although the effects of parental divorce were not significant to begin with for sibling contact and relationship quality (see Models 1A and 1B), effects of parental divorce become positive when parental conflict is controlled for, particularly for sibling contact. Hence, if siblings from divorced families would have experienced the same amount of parental conflict as siblings from intact families, then their contact is even more intense than that of siblings from intact families.

Models 3A, 3B, and 3C show whether the effect of parental divorce is dependent on parental conflict by including an interaction term between parental divorce and parental conflict. Contrary to expectations, the interaction effects for sibling contact and sibling conflict (Models 3A and 3C) are not significant, even though the effects are in the expected direction. For sibling relationship quality, we do find the expected positive interaction effect, indicating that parental divorce becomes increasingly less detrimental to the sibling relationship when parents have more conflict. The main effect of parental divorce in Model 3B shows that parental conflict lowers the quality of the sibling relationship in case of no parental conflict, but the effect fails to reach significance. This slightly negative effect turns into a positive effect when parental conflict is well above average: The turning point is about 3 on the conflict scale ($0.513/0.156$). Parental divorce appears to have a liberating effect on children in case of high conflict between parents, but results are not strong given that this is only the case for sibling relationship quality.

Overall, the effects of the controls conform to earlier findings. A random sibling plays a less significant role in someone's life when the sibling group is greater, thereby leading to less contact, less conflict, and lower quality. The same holds when geographical distance increases, and when siblings share a household, their role is particularly salient. When people age and experience important transitions into adulthood (i.e., employment, partner, parenthood), the sibling relationship becomes less important, thus leading to less contact, less conflict, and lower quality. When either parent is deceased, sibling conflict is higher, but there is no relation with relationship quality or contact. Women reported more conflict and contact. Education has little effect, and

religious people have higher-quality sibling relationships. Finally, responses coming from anchors differ from sibling reports in that the latter reported more conflicts, less contact, and a slightly higher-quality relationship.

Conclusion

This study was one of the few studies about the effect of parental divorce on sibling relationships. Our results show that siblings from divorced families more often have conflict-laden relationships in adulthood than do siblings from intact families. There were, however, no differences between siblings from divorced and intact families regarding the more positive aspects of their relationships—that is, relationship quality and contact frequency. As such, our findings show weaker support than do previous studies for any negative effects of parental divorce on adult sibling relationships. Studies by Riggio (2001) and Milevsky (2004), for example, found sibling relationships among young adults to be less positive in cases where parents divorced. Besides differences in measures and the number of controls, the inconsistent findings across studies may be explained by the older average age of our sample, which is about twice as high as that in the studies by Milevsky and Riggio. In our sample, the divorce occurred about 20 years ago on average, and the weaker support found here may suggest that the negative effects of parental divorce wear off as siblings progress into adulthood. Because our cross-sectional design did not allow us to do so, we strongly encourage future researchers to examine more directly whether the effects of parental divorce persist in the long term or diminish as time goes by.

Even though no effects were found for siblings' contact and relationship quality, parental divorce was still associated with more conflict in the long term. This strong effect for sibling conflict points at the importance of imitation and modeling of parental behavior. Siblings from divorced families may have more conflicts because they simply copied this behavior from their quarreling parents, even though they still feel positive toward each other. Indeed, parental conflict appears to be a crucial factor in the association between parental divorce and sibling conflict. Greater sibling conflict in divorced families could be explained by the greater parental conflict in these families. Furthermore, parental conflict was found to be a far more important determinant of sibling relationships than parental divorce per se. These results corroborate the findings by Milevsky (2004) and Panish and Stricker (2001). Interestingly, if the greater conflict in divorced families is taken into account, siblings from divorced families are found to have more

intense contact. If it were not for the overall higher levels of conflict at home, parental divorce may thus even lead to better sibling relationships (see Riggio, 2001).

Finally, there are indications that parental conflict conditions the effect of parental divorce. Parental divorce improves relationships among siblings in cases of high conflict. These findings conform to earlier research on other child outcomes, such as well-being and problem behavior, showing that children are actually better off when quarreling parents divorce (e.g., Hanson, 1999; Morrison & Coiro, 1999; Strohschein, 2005). We would like to remark, though, that no such differences between low- and high-conflict families are found for sibling contact and conflict.

Our data and research design improved on the few earlier studies on this topic, most notably in that we used reports from both siblings of the sibling dyad rather than reports from only one sibling. The study suffered from certain limitations as well, and these can be improved on in future research. First, our measures for sibling conflict and relationship quality were based on single-item measures and dichotomized. Preferably, continuous scales based on several items tapping positive and negative aspects of the sibling bond should be used in future extensions of this study. Second, the use of information from both siblings came at a price in that selective sibling response may have led to a sample biased toward sibling pairs who get along well. The role of parental divorce and parental conflict may therefore be greater than what our results suggest. Third and most important, we relied on a cross-sectional retrospective survey. Our findings may be biased by recall biases and by our lack of information about the precise temporal ordering of parental conflict and divorce. Longitudinal data are needed to more conclusively address the role of parental divorce and parental conflict.

Despite these shortcomings, our study has offered greater insight into the effect of parental divorce on sibling relationships than that of prior studies. In particular, there was little research on whether the consequences of parental divorce are conditioned by the amount of parental conflict. We recommend that future research focus on other such conditions. We would especially like to point at the role of remarriage and siblings' ages at parental divorce. The child adjustment literature considers these factors to be important moderators of divorce effects (Amato, 2000; Fischer, 2004), but sibling studies on these issues are rare and have yielded inconsistent findings (Deater-Deckard, Dunn, & Lussier, 2002; Milevsky, 2004; Riggio, 2001). Recently, the child adjustment literature has begun to examine whether the effect of parental divorce has declined over time as divorce has become a widespread phenomenon (e.g., Sigle-Rushton, Hobcraft, & Kiernan, 2005; Wolfinger, 1999). In light of rising

divorce rates and the importance of sibling relationships over the life course, it would be worthwhile to examine historical change in the effect of parental divorce on sibling relationships.

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